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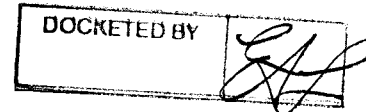
March 28, 2014

Arizona Corporation Commission

DOCKETED

MAR 28 2014

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007



Re: Notice of Filing – UNS Gas, Inc.'s Annual Demand-Side Management ("DSM") Progress Report, Docket No. G-00000G-14-0105

The Gas Energy Efficiency Standards set forth in the Arizona Administrative Code, Section R14-2-2509.A, require UNS Gas, Inc. ("UNS Gas") to submit an annual DSM Progress Report for each of its Commission-approved DSM programs by April 1st. UNS Gas hereby files its annual DSM Progress Report for the period of January through December 2013 for each of its Commission-approved DSM programs. The Measurement, Evaluation and Research Report listed in the DSM Progress Report is being filed directly with Commission Staff.

If you have any questions, please contact me at (520) 884-3680.

Sincerely,

Jessica Bryne
Regulatory Services

Enclosure: Report

cc: Julie McNeely-Kirwan, ACC
Compliance Section, ACC

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UNS GAS, INC.

ANNUAL DSM PROGRESS REPORT

January – December 2013

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

UNS Gas, Inc. (“UNS Gas” or “Company”), in accordance with Arizona Corporation Commission (“Commission”) Decision No. 72042 (December 10, 2010), and Arizona Administrative Code R14-2-2509 (effective January 1, 2011), submits the following Demand-Side Management (“DSM”) progress report. This report includes information for all DSM and Renewable Energy Technology (“RET”) programs, including programs for residential, non-residential, and low-income customers. This report includes the following:

- An analysis of the Company’s progress toward meeting the annual energy efficiency standard;
- A list of Commission approved DSM and RET programs, organized by customer segment;
- A description of the findings from completed research projects:
- A description of the programs;
- Program goals, objectives, and savings targets;
- Levels of customer participation in the programs;
- Costs incurred during the reporting period;
- Description of evaluation and monitoring activities and results;
- kW, kWh, therm savings, and therm equivalents from the programs;
- Environmental benefits from the programs;
- Incremental and net benefits, in dollars, of the programs;
- Problems encountered and proposed solutions;
- Proposed program modifications; and
- Termination of programs or measures.

A summary list of tables includes:

Table 1	DSM expenses by program
Table 2	DSM energy savings by program
Table 3	Cumulative energy savings as a comparison to the Gas Energy Efficiency Standards (“GEES” or “Standard”)
Table 4	DSM societal benefits
Table 5	Lifetime environmental savings by program

Commission approved DSM programs are attached in Appendix 2.

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

Table of Contents

Definitions.....	3
DSM Program Expenses: January - December 2013.....	4
DSM Energy Savings: January – December 2013.....	4
Cumulative DSM Savings: January – December 2013.....	4
DSM Societal Benefits: January – December 2013.....	5
DSM Lifetime Environmental Savings: January – December 2013.....	5
Low-Income Weatherization Program.....	6
Residential New Construction Program.....	8
Existing Homes Retrofit and Residential Energy Assessment Program	10
Energy Efficiency Residential Financing Pilot Program	13
C&I Facilities Gas Efficiency Program	14
Miscellaneous DSM Information.....	16
Appendix 1 – Measurement, Evaluation, And Research Reports.....	17
Appendix 2 – Commission Approved DSM Programs.....	18

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

DEFINITIONS

Rebates & Incentives – costs for customer rebates, incentives, and payments made to agencies for installation of low-income weatherization (“LIW”) measures.

Training and Technical Assistance – costs for energy efficiency training and technical assistance; for either utility employees or contractors.

Consumer Education – costs to support general consumer education about energy efficiency improvements.

Program Implementation – costs associated with implementing programs, including implementation contractor (“IC”) labor and overhead costs, as well as other direct program delivery costs.

Program Marketing – costs related to marketing programs and increasing DSM consumer awareness (direct program marketing costs as opposed to general consumer education).

Planning and Administration – costs to plan, develop, and administer programs including management of program budgets, oversight of the request for proposal (“RFP”) process, oversight of ICs, program development, program coordination, and general overhead expenses.

Measurement, Evaluation, and Research (“MER”) – identification of current baseline efficiency levels and the market potential of DSM measures; process evaluations; verification of installed energy efficient measures; tracking of savings; and identification of additional energy efficiency research.

Program Development, Analysis, and Reporting – costs to research and develop new DSM program opportunities, provide analysis of new programs and measures, and administer a database to track and report participation, savings, and benefits. These costs are essential to comply with reporting and rules requirements.

UNS Gas, Inc.
ANNUAL DSM PROGRAM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

Table 1

DSM PROGRAM EXPENSES: JANUARY - DECEMBER 2013

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning & Admin	Measurement, Evaluation & Research	Program Total Cost
Residential Programs								
Low-Income Weatherization	\$176,241	\$338	\$0	\$8,135	\$0	\$13,237	\$7,690	\$205,642
Residential New Construction	\$6,200	\$1,092	\$2,587	\$56,851	\$368	\$7,269	\$10,829	\$85,194
Existing Home Program	\$315,323	\$2,943	\$3,264	\$190,920	\$0	\$35,275	\$268	\$547,992
Residential Financing Program (Pilot)	\$0	\$1	\$0	\$823	\$0	\$57	\$0	\$881
Total for Residential Programs	\$497,764	\$4,375	\$5,850	\$256,728	\$368	\$56,837	\$18,787	\$839,709
Commercial Programs								
C&I Facilities Gas Efficiency	\$20,295	\$370	\$3,792	\$40,956	\$0	\$4,714	\$3,098	\$73,225
Total for Commercial Programs	\$20,295	\$370	\$3,792	\$40,956	\$0	\$4,714	\$3,098	\$73,225
Portfolio Totals	\$518,059	\$4,745	\$9,642	\$297,684	\$368	\$60,551	\$21,885	\$912,934
Program Costs								\$912,934
Program Development, Analysis, & Reporting Software								\$12,763
TOTAL								\$925,697

Table 2

DSM ENERGY SAVINGS: JANUARY – DECEMBER 2013¹

DSM Program	Capacity Savings MW	Annual MWh Savings	Annual Therm Savings	Lifetime MWh Savings	Lifetime Therm Savings
Low-Income Weatherization	0.09	183	10,530	3,203	74,970
Residential New Construction	0.00	0.0	14,057	0	421,713
Existing Home Program	0.00	0.0	66,506	0	1,028,767
C&I Facilities Gas Efficiency	0.00	0.0	26,854	0	537,082
EE Building Codes & Appliance Standards	NA	NA	11,489	NA	NA
Portfolio Totals	0.09	183	129,437	3,203	2,062,531

Table 3

CUMULATIVE DSM SAVINGS: JANUARY – DECEMBER 2013

Year	Retail Energy Sales (Therms)	Incremental Annual Energy Savings (Therms)	Cumulative Annual Energy Savings (Therms)	Cumulative Annual Savings as a % of previous year Retail Sales	Cumulative EE Standard
2010	140,222,684				
2011	139,990,801	281,203	281,203	0.20%	0.50%
2012	135,765,533	212,420	493,623	0.35%	1.20%
2013		129,437	623,059	0.46%	1.80%

¹ Annual therm savings for Low-income Weatherization reflect the addition of available credit for term equivalents per A.A.C. R14-2-2501.39 and R14-2-2504.A. UNS Gas is including an energy savings credit toward the Standard for changes in energy efficient building codes per A.A.C. R14-2-2504 (E).

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

Table 4

DSM SOCIETAL BENEFITS: JANUARY – DECEMBER 2013

DSM Program	Societal Benefits	Societal Costs	Net Benefits
Low-Income Weatherization	\$219,162	\$202,989	\$16,173
Residential New Construction	\$183,467	\$143,454	\$40,013
Existing Home Program	\$480,084	\$754,854	(\$274,770)
C&I Facilities Gas Efficiency	\$238,126	\$77,390	\$160,736
Portfolio Totals	\$1,120,840	\$1,178,687	(\$57,847)

Table 5

DSM LIFETIME ENVIRONMENTAL SAVINGS: JANUARY – DECEMBER 2013

DSM Program	Lifetime SO_x Reduction (lbs)	Lifetime NO_x Reduction (lbs)	Lifetime CO₂ Reduction (lbs)	Lifetime Water Reduction (gallons)
Low-Income Weatherization	2,498	8,071	3,821,666	746,266
Residential New Construction	0	0	4,976,213	0
Existing Home Program	0	0	12,139,446	0
C&I Facilities Gas Efficiency	0	0	6,337,562	0
Portfolio Totals	2,498	8,071	27,274,886	746,266

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

LOW-INCOME WEATHERIZATION PROGRAM

Description

The UNS Gas Low-Income Weatherization ("LIW") Program is designed to improve the energy efficiency of homes for customers whose income falls within the defined federal poverty guidelines. The LIW Program is intended to reduce gas bills for eligible customers and to improve the comfort within their home.

Program Goals and Objectives

The objectives of the Program are to:

- Increase the number of homes weatherized each year;
- Reduce low-income customers average household utility bills through the weatherization process; and
- Improve the quality of life for the customers by providing them with a more energy efficient home.

The 2013 goal was to weatherize 113 homes.

Level of Participation

A total of 102 households received weatherization assistance during this reporting period.

Costs Incurred

Costs incurred during this reporting period are listed below:

DSM Program	Rebates & Incentives*	Training & Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning & Admin	Measurement, Evaluation & Research	Program Total Cost
Low Income Weatherization	\$176,241	\$338	\$0	\$8,135	\$0	\$13,237	\$7,690	\$205,642

a. Includes \$4,436 for health and safety related repairs and \$15,111 for Weatherization Agencies administration expenses.

Evaluation and Monitoring Activities and Results

The Governor's Office of Energy Policy ("GOEP") is analyzing and tracking energy use in weatherized homes statewide through billing data provided UNS Gas and other Arizona gas and electric utilities. As their database grows, a more accurate analysis of the impact of weatherization activities is emerging. UNS Gas will report energy savings from weatherization activities based upon the most recent AEO report. The AEO does not report any kW demand savings. The AEO report is include in Appendix 2.

The January 2014 GOEP report is summarized below:

- An analysis of 208 homes has been completed by utilizing Arizona Public Service Company ("APS"), Tucson Electric Power Company, UNS Gas, UNS Electric, Inc. ("UNS Electric"), and Southwest Gas Corporation utility data. This analysis is ongoing, and new data will be updated on a quarterly basis.
- Savings to Investment Ratios ("SIR") are provided for a total investment of all funding spent (diagnostics, energy measures, health and safety measures) and for energy related measures only (diagnostics and energy measures).

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

- Present value is based on 17.5 year measure life, discount rate of 3% and a utility cost escalation rate of 3%.
- The combined SIR of all jobs reviewed to date regarding funds spent on diagnostics, energy measures, and health and safety measures was 1.04. Health and safety represented 17% of expenditures.
- The combined SIR of all jobs reviewed to date for funds spent on energy measures and diagnostics was 1.26.
- The average saving per home reviewed was 2,265 kWh and 42 therms of natural gas (gas therms average includes all electric homes).

kW, kWh, and Therm Savings

The savings for this reporting period are listed below:

No. of Homes	kW savings	kWh savings	Therm savings ^a
102	88	183,020	10,530

a. Includes available credit for therm equivalents per A.A.C. R14-2-2501.39 and R14-2-2504.A.

kWh savings are adjusted for line losses of 10.69%.

Problems Encountered and Proposed Solutions

No significant problems were encountered during this reporting period.

Program Modifications

There were no Program modifications during this reporting period.

Programs or Measures Terminated

No measures were terminated during this reporting period. UNS Gas does not plan to terminate this Program or any Program measures in 2013.

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

RESIDENTIAL NEW CONSTRUCTION PROGRAM

Description

The Residential New Construction Program for UNS Gas is marketed as the Energy Smart Homes ("ESH") Program. The ESH Program emphasizes a whole-house approach to improving health, safety, comfort, durability, and energy efficiency. The Program promotes homes that meet the Environmental Protection Agency ("EPA")/DOE Energy Star® Home performance requirements. To encourage participation, the ESH Program provides incentives to homebuilders for each qualifying home. To meet the Energy Star® home performance requirements, random on-site inspections and field testing must be conducted by third-party RESNET® certified energy raters selected by the builder.

The Program is administered as a Joint Utility Program. In cooperation with electric service providers, the Program offers builders the option to earn incentives from both applicable utilities. To earn the Joint Utility Energy Star® Home Certification, a participating builder would first contract with either APS or UNS Electric. Certified homes can qualify for additional incentives from UNS Gas by including higher efficiency gas-fired furnaces and water heaters.

Program Goals, Objectives, and Savings Targets

The objectives of the Program are to:

- Work with local builders to construct energy efficient homes;
- Educate consumers on the benefits of Energy Star® Homes;
- Promote builders who provide Energy Star® Homes that include high efficiency furnaces and water heaters;
- Train builder construction staff and subcontractors in advanced building science concepts to increase energy efficiency through improved design and installation practices;
- Transform the market and improve construction practices in the UNS Gas service territory;
- Reduce peak demand and overall energy consumption in new homes;
- Stimulate construction of new homes that are inspected and tested to assure energy performance;
- Assist builder sales agents with promoting and selling energy-efficient homes; and
- Increase homebuyer awareness and understanding of energy-efficient building practices and the benefits of purchasing an energy efficient home.

The goal for 2013 was 90 homes completed.

Level of Participation

In 2013 71 homes were completed.

Costs Incurred

Costs incurred during this reporting period are listed below:

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning & Admin	Measurement, Evaluation & Research	Program Total Cost
Residential New Construction	\$6,200	\$1,092	\$2,587	\$56,851	\$368	\$7,269	\$10,829	\$85,194

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

Evaluation and Monitoring Activities and Results

Navigant Consulting performed an evaluation of the ESH Program for calendar year 2013. The evaluation resulted in a realization rate of 100% for therm savings. The report is attached in **Appendix 1**.

kW, kWh, and Therm Savings

No. of Homes	Therm savings	Lifetime Therms
71	14,057	421,713

As a component of the Joint Utility Program, UNS Gas will only claim the therm savings, and the electric service provider will claim the electric savings for all participating homes.

Problems Encountered and Proposed Solutions

The large geographic territory served by UNS Gas makes builder interaction difficult. UNS Gas is refining area assignments in an effort to increase interaction with builders and increase participation.

Program Modifications

No program modifications occurred during this reporting period.

Programs or Measures Terminated

No measures were terminated during this reporting period. UNS Gas does not plan to terminate the ESH Program or any Program measures in 2014.

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

EXISTING HOMES RETROFIT AND RESIDENTIAL ENERGY ASSESSMENT PROGRAM

Description

The UNS Gas Existing Homes Retrofit Program (“Program”) is marketed as the Efficient Home Program. The Program is designed to encourage homeowners to increase the energy efficiency of their homes. The Program provides incentives for high-efficiency heating equipment, water heaters, sealing leaky duct work, installing insulation, and air sealing. The Program provides direct incentives to participating contractors. The incentives are then required to be passed on to utility customers as a line item credit toward approved Program measures. Along with the direct incentives, UNS Gas also provides Building Performance Institute (“BPI”) and Program administrative training and mentoring to the contractors.

The Residential Energy Assessment Program (“REAP”) is an integral component of the Program. The major components of the REAP include: a home energy assessment (or “audit”); a general appliance assessment; and installation of up to three faucet aerators and one low flow showerhead per home. Also provided with the assessment is information on behavioral changes, other UNS Gas efficiency programs, rate options, and contact information to assist with questions. The assessment also provides the homeowner with information regarding energy savings by participating in other components of the Program, as described above.

Commission Decision No. 72045 (December 10, 2010) approved the Program and Commission Decision No. 72056 (January 6, 2011) approved the REAP. While they were approved in separate Decisions, the Programs are designed to complement each other and are administered and reported as a single Program.

Program Goal, Objectives and Savings Targets

The objectives of the Program are as follows:

- The proper sizing and installation of high efficiency gas furnaces and water heaters, sealing leaky ductwork, air sealing, and the installation of insulation in conjunction with air sealing;
- Advance the building science skills of participating contractors leading to BPI certification; and
- Cultivate customer demand for, and a contractor base to deliver, comprehensive energy efficiency retrofits in alignment with the Home Performance with Energy Star model.

The objectives of the REAP component of the program are as follows:

- Assess how much energy a home is using and what measures can be taken to improve efficiency;
- Install up to three (3) faucet aerators and one (1) showerhead; and
- Educate homeowners about applicable UNS Gas rebates and simple behavioral modifications to increase energy efficiency.

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

The 2013 program goals were:

Retrofit Measure	Goal
High Efficiency Furnace	41
Duct Test & Repair	200
Air Sealing and/or Attic Insulation	220

Energy Assessment Measure	Goal
Audits	50
Direct install- Faucet Aerators	100
Direct install- Low flow Showerhead	50

The energy savings goal was 84,151 therms.

Level of Participation

Participation levels during the reporting period are listed below:

Participation Levels	
High Efficiency Furnace	75
Duct Test & Repair	212
Air Sealing and/or Attic Insulation	223
Audits (including direct install measures)	34

Costs Incurred

Costs incurred during this reporting period are listed below:

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning & Admin	Measurement, Evaluation & Research	Program Total Cost
Existing Home Program	\$315,323	\$2,943	\$3,264	\$190,920	\$0	\$35,275	\$268	\$547,992

Evaluation and Monitoring Activities and Results

Navigant Consulting performed an evaluation of this Program for calendar year 2013. The evaluation resulted in a realization rate of 100% for therm savings. The report is attached in Appendix 1.

kW, kWh, and Therm Savings

Measure	Units	Therm savings	Lifetime Therms
Air Sealing	223	30,398	607,957
Duct Test & Repair	212	29,746	297,462
Gas Furnaces	75	5,972	119,449
Audits	34	390	3,899
Total	544	66,506	1,028,767

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

Problems Encountered and Proposed Solutions

Although the Program had steady participation and generated the most energy savings of all the Company's DSM programs during 2013, upon updated analysis it became apparent that the Program is not cost-effective. Despite efforts to modify the Program it remained non cost-effective and the Company suspended the Program at the end of 2013. UNS Gas will honor incentive payments for participants who had initiated projects prior to the end of 2013.

Program Modifications

No program modifications were made during this reporting period.

Programs or Measures Terminated

UNS Gas has suspended the Program for 2014 and the foreseeable future. If a new delivery model is established that would increase the cost-effectiveness of the Program, UNS Gas may request permission from the Commission to re-implement the Program at that time.

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

ENERGY EFFICIENCY RESIDENTIAL FINANCING PILOT PROGRAM

Description

The Residential Energy Financing Pilot Program offers home improvement loans to UNS Gas customers seeking to finance home EE improvements through the Existing Homes and Audit Direct Install program. The Program is primarily delivered through participating contractors who receive training and support from UNS Gas and the Program lender, Vantage West Credit Union ("Vantage West").

Program Goals and Objectives

The Program objective is to support the implementation of residential energy efficiency measures by providing an equitable financing mechanism.

Level of Participation

No program loans were issued in 2013.

Costs Incurred

Costs incurred during this reporting period are listed below:

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning & Admin	Measurement, Evaluation & Research	Program Total Cost
Residential Financing Program (Pilot)	\$0	\$1	\$0	\$823	\$0	\$57	\$0	\$881

Evaluation and Monitoring Activities and Results

There is no evaluation for this Program.

kW, kWh, and Therm Savings

There are no savings associated with this Program.

Problems Encountered and Proposed Solutions

This program had no participation since its original approval in January 2011.

Program Modifications

There are no Program modifications during this reporting period.

Programs or Measures Terminated

This Program was terminated in 2013 per Commission Decision No. 73939 (June 27, 2013).

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

C&I FACILITIES GAS EFFICIENCY PROGRAM

Description

The Commercial and Industrial (“C&I”) Facilities Gas Efficiency Program is designed to promote the installation of high-efficiency, gas-fueled equipment and systems at existing commercial and industrial facilities within the UNS Gas service area.

Program Goals, Objectives, and Savings Targets

The Program objectives are to:

- Help commercial and industrial customers reduce and manage their energy costs;
- Reduce greenhouse gas emissions; and
- Lower overall rates and energy costs compared to other resource options.

The savings goal for 2013 was 253,171 therms.

Level of Participation

13 customers participated in the Program during this reporting period.

Costs Incurred

Costs incurred during this reporting period are listed below:

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implementation	Program Marketing	Planning & Admin	Measurement, Evaluation & Research	Program Total Cost
C&I Facilities Gas Efficiency	\$ 20,295	\$ 370	\$ 3,792	\$ 40,956	\$ -	\$ 4,714	\$ 3,098	\$ 73,225

Evaluation and Monitoring Activities and Results

Navigant Consulting performed an evaluation of this Program for calendar year 2013. The evaluation resulted in a realization rate of 100% for therm savings. The report is attached in **Appendix 1**

kW, kWh, and Therm Savings

Measure	No. Installed	Therm savings	Lifetime Therms
High-Efficiency Boilers	6	22,149	442,981
High-Efficiency Furnaces	13	3,353	67,064
High-Efficiency Water Heaters	3	1,352	27,037
Total	22	26,854	537,082

Problems Encountered and Proposed Solutions

UNS Gas’s 2011-2012 Energy Efficiency Implementation Plan (“2011-2012 EE Plan”) was filed on April 4, 2011. The Commission’s decision in June 2013² to not approve any new measures included in the 2011-2012 EE Plan will severely hinder UNS Gas’ ability to increase participation in this Program.

² Commission Decision No. 73939 (June 27, 2013)

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

Program Modifications

No modifications were made to the Program during this reporting period.

Programs or Measures Terminated

No measures were terminated during this reporting period. UNS Gas does not plan to terminate this Program or any Program measures in 2013.

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

MISCELLANEOUS DSM INFORMATION

The UNS Gas 2011-2012 EE Plan was filed on April 4, 2011, in accordance with Section R14-2-2505 of the Standard. In June 2013 Commission Decision No. 73939 approved a continued budget for the UNS Gas DSM programs, but did not approve any of the new programs or EE measures contained in the 2011-2012 EE Plan. The two year delay hindered the Company's ability to meet the Standard for 2013. Without Commission approval of new EE measures or programs in subsequent years it will continue to be difficult for the Company to meet the Standard. Since Commission Decision No. 73939 ordered UNS Gas to not file its next EE Plan until further order of the Commission the Company is unable to determine when it may be possible to meet the Standard.

UNS Gas implemented a comprehensive tracking and reporting software solution for its EE Programs in 2013. The software solution will continue to be built out for 2014 programs, with the goal of full transition by the end of 2014. During 2014 a backup database of Excel files will be maintained.

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

APPENDIX 1 – MEASUREMENT, EVALUATION, AND RESEARCH REPORTS

- GOEP Training, Monitoring, and Evaluation Report – January 2014
- Navigant Consulting – UNS Gas PY2013 Year-end Measurement, Evaluation, and Research Report³

³ This report is being provided directly to Commission Staff.

UNS Gas, Inc.
ANNUAL DSM PROGRESS REPORT FOR THE PERIOD:
January through December 2013

APPENDIX 2 – COMMISSION APPROVED DSM PROGRAMS

DSM Program
Residential Programs
Low-Income Weatherization
Residential New Construction
Existing Home Program
Commercial Programs
C&I Facilities Gas Efficiency

**ARIZONA GOVERNOR'S OFFICE of ENERGY POLICY
TRAINING, MONITORING AND EVALUATION REPORT
FISCAL YEAR 2013 ANNUAL REPORT
January 2014
UNS ENERGY CORPORATION**

Re: Governor's Office of Energy Policy Contract

Training and Monitoring for Weatherization

Southwest Building Science Training Center

The Southwest Building Science Training Center (Training Center), operated by the Foundation for Senior Living Home Improvement (FSL) and which was funded through the Governor's Office of Energy Policy (OEP) and local utilities during 2012, provides Arizona low-income weatherization technicians with the knowledge and skills needed to successfully perform diagnostics and repairs on Arizona's housing stock. As of January 2013 the training center is no longer being funded though OEP or local Utilities.

The Training Center has completed an expansion of the training center by developing a multistory training lab that will be used to provide real world hands on training to the new green workforce. Funding was committed utilizing American Recovery and Reinvestment Act of 2009 (ARRA) funds for the construction of an expanded diagnostic lab. The training center is also developing new curriculum that will better prepare the workforce. The curriculum will provide certifications for Installers, Crew Leaders and Auditors.

Training Center Courses

<http://www.swbstc.org/trainings/>

The Center, in partnership with the Building Performance Institute, Inc. (BPI), provides nationally recognized building science certifications to Arizona's weatherization agencies. All agencies have BPI Certified staff members or contractors that are BPI certified.

Details on BPI

<http://www.bpi.org/>

The Training Center continues to provide a Weatherization Assistance Program (WAP) boot camp. The Boot Camp is a five-day training that covers the basics of building science, pressure diagnostics, health and safety and residential energy auditing.

The Training Center also provides a Lead Renovator Repair and Painting certification class. On April 22, 2010 the new EPA Regulations went into effect regarding lead safe work practices. All contractors working on houses Pre-1978 are now required to be registered with the EPA as a lead renovator firm. Any contractors performing work on houses must now have at least one person on their crew that is "Lead Renovator" certified. This certification requires an eight-hour training which involves both a Power Point slide presentation and a "Hands On" section to teach lead safe practices when working on a home with a potential for Lead based paint. Certification requires the participant to pass both a written and field skills test.

The Training Center also has implemented an OSHA 30-hour and 10-hour certification course.

The OSHA 30-Hour Construction Industry Outreach Training course is a comprehensive safety program designed for anyone involved in the construction industry. Specifically devised for safety directors, foremen, and field supervisors, the program provides complete information on OSHA compliance issues. OSHA recommends Outreach Training Programs as an orientation to occupational safety and health for workers covered by OSHA 29 CFR 1926.

The OSHA 10-Hour Construction Industry Outreach Training Program is intended to provide an entry level construction worker's general awareness on recognizing and preventing hazards on a construction site. OSHA recommends Outreach Training Program courses as an orientation to occupational safety and health for workers covered by OSHA 29 CFR 1926.

The Training Center through a two-year grant has developed a course for quality control for the weatherization program. The course focuses on critical details of the work being performed and teaches the steps necessary to complete the work, correctly every time. The training material and detail sheets that are taught in the class are available online to the students once they have completed the course. This course will become a requirement for weatherization crews in fiscal year 2014.

Peer-to-Peer Fiscal and Technical Procedures

The Arizona WAP has formed peer-to-peer working groups that allow the fiscal and technical staff from the agencies and the OEP to meet and discuss issues that arise in the program. Agencies are able to share solutions to common problems and other information. These peer-to-peer meetings occur every two months and have been a great arena to discuss any changes or improvement to the program.

Agency Personnel Performance Reviews

A review and monitoring process to evaluate the competency of agency personnel performing the various requirements of the weatherization program was developed for the statewide weatherization assistance program. Based on this process, additional one-on-one training and technical assistance is provided on an as-needed basis.

Inspections

The Arizona WAP has implemented a monitoring program that focuses on determining areas that need improvement and utilizes the monitoring process to implement needed changes. The areas covered include: auditing, diagnostics, testing and measures completed and program operations. This process begins with the review of 100% of the technical reports for auditing, diagnostics, testing and work completed each month. These reports can highlight instances where opportunities were missed or program requirements were not followed. When there are concerns with some element of the report, a site visit is conducted to address the concerns. At the job site, the diagnostic, testing and work are reviewed to determine if any improvements can be made. A minimum of 20% of the job sites will be visited with visits taking place approximately twice a month. Based on the site visit results, follow-up training and technical assistance is provided to the local agency. For agencies where the technical reports do not show concerns, the site visit consists of monitoring a number of randomly selected

homes and reviewing the diagnostics, testing and work completed. These efforts, combined with the training and competence programs, have a goal of ensuring that the program is providing the clients with a high return on the utilities' investment, while maintaining or improving the customers' health and safety.

Utility Bill Analysis

This report includes an analysis of 208 homes utilizing APS, TEP, Unisource Gas and Electric, and Southwest Gas utility data. This analysis is ongoing, new data will be updated to these values on a quarterly basis.

Provided are Savings to Investment Ratios (SIR) for total investment from all funding spent (diagnostics, energy measures and health and safety measures) and for energy related measure only (diagnostics and energy measures).

Assumptions

Present value is based on 17.5 years measured life, discount rate of 3% and utility cost escalation rate of 3%.

Results Summary

The combined SIR of all jobs reviewed to date for funds (LIHEAP, DOE, Utilities, CDBG, URRD, SERC) spent on diagnostics, energy measures and health and safety measures was 1.04. Health and safety represented 17% of expenditures on the homes.

The combined SIR of all jobs reviewed to date for funds spent on energy measures and diagnostics was 1.26.

The average saving per home reviewed was 2265 kWh and 42 therms of natural gas (gas therms average includes all electric homes).